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10/827,525

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EXAMINER

MONDESIR, ABDIAS

ART UNIT

PAPER NUMBER

2617

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DELIVERY MODE

05/27/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/827,525

Applicant(s)

MALKAMAKI, ESA

Examiner

ABDIAS MONDESIR

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 5, 2008 has been entered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 16, 28, 31 and 34 rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al. (US 2002/0021698), hereinafter, referred as Lee.

In regard to claims 1, 16, 31 and 34, Lee discloses a method, computer program product, system and apparatus comprising:

associating each data unit of a logical channel with a logical channel-specific sequence number without a priority identification number in a medium access control entity of a transmitter (paragraph 87-88)

In regard to claim 28, Lee discloses a user terminal comprising:

an associating unit configured to associate each data unit of a logical channel with a logical channel-specific sequence number without a priority identification number in a medium access control entity (paragraph 87-88).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 2-5, 8-9, 11, 17-26, 29,30, 32, 33, 35-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Yi et al. (2003/0128705), hereinafter, referred as Yi.

In regard to claims 35, 36, and 39, Lee discloses an apparatus, method and system comprising:

associating each data unit of a logical channel with one logical channel-specific sequence number without a priority identification number in a transmitter (paragraphs 87-88). Lee

discloses all the limitations of the claim but fail to disclose where the data with the associated sequence number is sent within one transmission time interval. Yi teaches an apparatus and a method where a data unit with an associated sequence number is sent within one time interval (paragraph 33-37; Fig 6, numbers associated with data blocks 180; paragraph 43). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the apparatus, method, and system taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claims 2 and 11, Lee discloses all the limitations of the method of in claim 1 but fail to teach the receiving and arranging of the data units. Yi teaches receiving, in the network infrastructure, data units of at least one logical channel associated with sequence numbers in the user terminal; and arranging, in a network element of the network infrastructure, the data units of each logical channel in order of the sequence number associated with the data units (see Fig. 6, arranged data blocks 13-20 in reordering buffer 190 of receiving side). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the method taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claim 3, Lee discloses all limitations of the method of claim 1 but fails to disclose the retransmission method. Yi teaches the method of performing at least one retransmission including at least on data unit of a logical channel from user terminal to the network infrastructure over the air interface (paragraphs 48-50). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the method taught by Yi. One is motivated by such in order improve the transmission

efficiency.

In regard to claims 4 and 5, Lee discloses all the limitations of the method of claim 36, but fails to teach the time interval in which the association occurs. Lee teaches the method comprising associating each data unit of one transmission time interval with one sequence number; and associating data units in successive transmission time intervals with successive sequence numbers (paragraphs 45-47). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the method taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claim 8, Lee discloses all the limitations of the method of claim 36 but fails to teach the associating within a time interval. Yi teaches associating each data unit of a logical channel to be sent within one transmission time interval with one sequence number in a medium access control entity, in a radio link control entity or in an entity between the radio link control entity and the medium access control entity of the transmitter (paragraph 34-36). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the method taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard claim 9, the combination of the references discloses the method of claim 8. Yi further discloses the method further comprising arranging the data units of each logical channel in the radio link control entity, in the medium access control-d entity or in the entity between the radio link control entity and the medium access control-d entity of a receiver (paragraphs 41-43). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of references to include the method taught by Yi. One is motivated by such

in order improve the transmission efficiency.

In regard to claim 37, the combination of the references discloses all the limitations of the method of claim 36. Yi further discloses a method of associating each data unit of a logical channel with sequence numbers in a transmitter such that a sequence number is incremented at most by one per on incremented transmission time interval (paragraph 34-37). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of references to include the method taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claims 17-20 and 24, the combination of the reference discloses performing the method of the claim as previously discloses. Yi further discloses a computer program product that performs the entire steps described within the claims (paragraph 198). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of the references to include the computer program product taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claim 25, Lee discloses a network element comprising
a receiver configured to receive data units of at least one logical channel from a user terminal, each data unit of a logical channel sent being associated with a logical channel-specific sequence number without a priority identification number in a medium access control entity of a user terminal (paragraph 92),; and wherein the network element is part of a network structure (Fig. 1 and 2).

Lee discloses all the limitations of the claim but fail to teach the arranger to arrange the data. Yi teaches an arranger configured to arrange the data units of each logical channel in order

according to the sequence numbers associated with the data units (Fig. 6, data blocks 180 on transmitter side are transmitted and rearranged as data blocks 190 on the receiver side).

Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the element taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claim 32, Lee discloses a system comprising:

a network infrastructure; and

at least one user terminal communicating with the network infrastructure over an air interface (Fig. 1, 2, and 7), wherein

a user terminal is configured to associate each data unit of a logical channel to be sent within one transmission time interval with on logical channel-specific sequence numbers without a priority identification number (paragraphs 87-88);

the network is configured to receive the data units of at least one logical channel associated with sequence numbers (paragraph 92).

Lee discloses all the limitations of the claim but fail teach the arranging of the data units. Yi teaches the method where the network infrastructure is configured to arrange the data units of each logical channel in order of the sequence (paragraph 33-37; Fig. 6, data blocks 180 on transmitter side are transmitted and rearranged as data blocks 190 on the receiver side). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the element taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claim 33, the combination of the references discloses the system of claim 32.

Yi further discloses the method wherein a user terminal is configured to associate each data unit of a logical channel in one transmission time interval with one sequence number and the user terminal is configured to associate data units in successive transmission time interval with successive sequence numbers (paragraph 33-37; Fig. 6, data blocks 180 on transmitter side are transmitted and rearranged as data blocks 190 on the receiver side). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the element taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claim 40, Lee discloses a user terminal comprising
a network infrastructure (Fig. 1 and 2); and
an associating unit configured to associate each data unit of a logical channel to be sent within one transmission time interval with one logical channel-specific sequence number without a priority identification number (paragraph 87-88). Lee discloses all the limitations of the claim but fail to disclose where the data with the associated sequence number is sent within one transmission time interval. Yi teaches the method where a data unit with an associated sequence number is sent within one time interval (paragraph 33-37; Fig 6, numbers associated with data blocks 180; paragraph 43). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include method taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claim 29, the combination of the reference discloses the user terminal of claim 40. Yi further disclose the method wherein the associating unit is configured to associate data units of each logical channel with sequence numbers in a medium access control entity, in a

radio link control entity or at an entity between a radio link control entity and a medium access control entity of a user terminal (paragraph 33-37). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the associating taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claim 30, the combination of the references discloses the user terminal of claim 29. Yi further teaches wherein the user terminal is configured to transmit the data units to the network infrastructure and to perform at least one retransmission as a response to a request from the network infrastructure over an air interface, the retransmission including at least one data unit of a logical channel (paragraph 48-50). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the associating taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claims 38, 19 and 21-23, the combination of the reference discloses performing the method of the claim as previously discloses. Yi further discloses a computer program product that performs the entire steps described within the claims (paragraph 198). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of the references to include the computer program product taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claim 41, Lee discloses an apparatus, wherein
a receiver is configured to receive data units of at least one logical channel from a transmitter, each data unit of a logical channel being associated with one logical channel-specific sequence number in the transmitter without a priority identification number (paragraph 92).

Lee discloses all the limitations of the claim but fail to disclose the data unit sent in one

time interval and the arranger to arrange the data units. Yi teaches the data unit sent within one transmission interval and an arranger configured to arrange the data units of each logical channel in order according to the sequence numbers associated with the data units (paragraph 33-37; Fig. 6, data blocks 180 on transmitter side are transmitted and rearranged as data blocks 190 on the receiver side). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the apparatus taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claim 42, Lee discloses a network element comprising;

a receiver is configured to receive data units of at least one logical channel from a transmitter, each data unit of a logical channel sent within one transmission time interval being associated with one logical channel-specific sequence number in the transmitter (paragraph 92); and wherein the network element is part of the network infrastructure (Fig. 1 and 2)

Lee discloses all the limitations of the claim but fail to disclose the data unit sent in one time interval and the arranger to arrange the data units. Yi teaches the data unit sent within one transmission interval and an arranger configured to arrange the data units of each logical channel in order according to the sequence numbers associated with the data units (paragraph 33-37; Fig. 6, data blocks 180 on transmitter side are transmitted and rearranged as data blocks 190 on the receiver side). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the element taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claim 43, Lee discloses an apparatus comprising,

a receiver configured to receive data units of at least one logical channel from a

transmitter, each data unit of a logical channel being associated with a logical channel-specific sequence number without a priority identification number in the transmitter (paragraph 92); and

Lee discloses all the limitations of the claim but fail to disclose the arranger to arrange the data units. Yi teaches an arranger configured to arrange the data units of each logical channel in order according to the sequence numbers associated with the data units (paragraph 33-37; Fig. 6, data blocks 180 on transmitter side are transmitted and rearranged as data blocks 190 on the receiver side). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of Lee to include the element taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claims 44, the combination of the reference discloses performing the method of the claim as previously discloses. Yi further discloses a computer program product that performs the entire steps described within the claims (paragraph 198). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of the references to include the computer program product taught by Yi. One is motivated by such in order improve the transmission efficiency.

In regard to claims 45-48, the combination of the references discloses all the limitations of the apparatus of claims 34, 35, 41 and 43. Yi further discloses the method further comprising arranging the data units of each logical channel in the radio link control entity, in the medium access control-d entity or in the entity between the radio link control entity and the medium access control-d entity of a receiver (paragraphs 41-43). Therefore it would be obvious for one of ordinary skill in the art at the time of the invention to modify the teaching of references to include the method taught by Yi. One is motivated by such in order improve the transmission

efficiency.

7. Claims 6-7 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Cheng et al (US Publication 2004/0228313), hereinafter, referred as Cheng.

In regard to claim 6, Lee discloses all the limitations of the method of claim 1, but fails to teach the further limitations of claim 6. Cheng teaches the mapping medium access control-e flows from a medium access control-d entity to transport channels in a medium access control-e entity of the user terminal; and associating data units with sequence numbers common to the medium access control-d entity and the medium access-e entity (see fig 3, MAC-d #320 and MAC-EU #340; paragraph 40, lines 1-3 and paragraph 47). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Lee teaching to include the mapping of the data to improve uplink transmission. One is motivated by such because using the transport channels of the medium access control-e entity allows for high uplink rates.

In regard to claim 7, Lee discloses all the limitation of the method of claim 1, but fails to teach transmitting the data units using enhanced uplink dedicated channel. Cheng teaches in paragraph 47 that data units (MAC-d flows that are the input of MAC-EU 340) are transmitted using the enhanced uplink dedicated channel (output of the MAC-EU). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Lee teaching to use an enhanced uplink dedicated channel for transmitting the data units. One is motivated by such in order “to be able to schedule a specific UE with a relatively good channel condition to send high rate uplink data based on the UE’s capabilities” (paragraph 22).

In regard to claims 12 -15, Lee discloses all the limitations of claim 36 but fail to disclose that the data units are re-ordered in a medium access control-e entity of the receiver and that data units are given a common medium access control-e header to medium access control-d data units having the same logical channel number and the same sequence number. Cheng teaches that data units are re-ordered in the MAC-EU entity of the receiver (Fig.3, MAC-EU 340 and Fig. 5, re-ordering section 547; paragraph 55-57). Cheng further discloses that the when the MAC-EU data unit is disassembled in the receiver that the MAC-EU header is remove leaving the MAC-d data unit (paragraph 57). Therefore it is obvious that the MAC-EU header is added to the MAC-d data unit in the transmitter. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Lee teaching to include re-ordering the data unit in the MAC-e entity and adding the MAC-e header. One is motivated by such in order “ensure a largest achievable throughput in the uplink” (paragraph 47).

8. Claims 10 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and Yi in view of Cheng.

In regard to claim 10, Lee and Yi disclose all the limitations of claim 8 but fail to disclose the arranging the data units a radio network controller. Cheng teaches that the HARQ process is performed at the RNC (paragraph 9 and 10). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Lee and Yi to include the arranging the data units a radio network controller. One is motivated by such to effectively manage data traffic for transmission in the system.

In regard to claim 27, Lee discloses an element comprising:

a receiver configured to receive data units of at least one logical channel from a user terminal, each data unit of a logical channel being associated with a logical channel-specific sequence numbers without a priority identification number in a user terminal (paragraph 92).

Lee discloses all the limitations of the claim but fail to disclose the data unit sent in one time interval and the arranger to arrange the data units. Yi teaches the data unit sent within one transmission interval and an arranger configured to arrange the data units of each logical channel in order according to the sequence numbers associated with the data units (paragraph 33-37; Fig. 6, data blocks 180 on transmitter side are transmitted and rearranged as data blocks 190 on the receiver side).

The combination of Lee and Yi discloses that the method is performed in the MAC entity of the receiver but fails to teach that the method is configured at the radio network controller. Cheng further teaches that the MAC entity resides in the radio network controller. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Lee and Yi teaching to include receiving at the radio network controller. One is motivated by such to effectively manage data traffic for transmission in the system.

Response to Arguments

9. Applicant's arguments with respect to claims 1-44 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ABDIAS MONDESIR whose telephone number is (571)270-

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3014. The examiner can normally be reached on M - Th 8:30am - 6:00pm and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. M./
Examiner, Art Unit 2617

/Rafael Pérez-Gutiérrez/
Supervisory Patent Examiner, Art Unit 2617